



Volcanic ash cloud forecasting: combining satellite observations and dispersion modelling

Kate Wilkins (1), Matthew Watson (1), Helen Webster (2), David Thomson (2), Helen Dacre (3), Shona Mackie (1), and Natalie Harvey (3)

(1) University of Bristol, Earth Sciences, Bristol, United Kingdom (kate.wilkins@bristol.ac.uk), (2) UK Met Office, Exeter, United Kingdom (helen.webster@metoffice.gov.uk), (3) University of Reading, Meteorology, Reading, United Kingdom (h.f.dacre@reading.ac.uk)

During the eruption of Eyjafjallajökull in April and May 2010, the London Volcanic Ash Advisory Centre demonstrated the importance of InfraRed satellite imagery for monitoring volcanic ash in the atmosphere and in validating NAME, the UK Met Office operational model used to forecast ash dispersion and to advise Civil Aviation. Significant effort has gone into researching inversion modelling using NAME and satellite retrievals of volcanic ash to infer an optimal model source term, elements of which are often unknown or highly uncertain. This presentation poses a possible alternative method for combining the two by assimilating satellite observations of downwind ash clouds into the model to create effective, virtual sources in order to constrain some of the uncertainty in the source term.